All Writer

Universal Programmer

User Manual

SYSTEM GENERAL

All Writer

SYSTEM GENERAL Programmers

AllWriter Programmer

Equinox Order Code: SG-ALLWRITER-1

Release Notes

Version 1.00 25th May 1999

Contents

Technical Support..... 2

Product Description..... 3

Package Contents..... 3

Hardware Overview – The Base Unit..... 4

Hardware Overview – The Adaptor..... 5

Hardware Overview – Match Card..... 6

Checking Your Computer System..... 7

Setting up the Hardware..... 7

Installing the Software..... 8

Executing 'AW.EXE'..... 9

Programming Example..... 10

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Technical Support

It is often the case that users experience problems when installing or using a product for the first time. Equinox are unable to answer technical support questions about this product or its use by telephone.

If you have a technical support problem, please consult the following list for help:

This manual

1. On-line help

The help system is context sensitive. Press <F1> for help at any time.

2. Internet Web Site

Further information about this product which may help solving any problems can be found at:
www.equinox-tech.com

3. E-mail

Please e-mail any technical questions about this product to: **allwriter@equinox-tech.com**
Equinox will try to answer your questions about this product as quickly as possible. However, we can not promise an immediate reply. Please consult our web site for new software updates as the problem that you are enquiring about may have already been fixed in a new version.

4. Fax

Please fax any technical support questions about this product to: **+44 (0) 1204 535555**
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Product Description

The AllWriter Universal programmer was designed mainly for engineering applications. It supports many programmable devices including EPROM, EEPROM, Flash EPROM, microcontrollers, PLD, CPLD, FPGA etc. The programming system consists of a base unit and different socket adapters designed to support devices in different packages. Examples are socket adapters for PLCC, TSOP, SOP, VSOP, QFP, BGA and many other new packages.

The AllWriter can be connected to the PC through the RS-232C serial port or the IEEE1284 parallel port for high speed Remote Control operation. The user friendly Windows Software allows you to operate the system without consulting the user's manual. The unique MatchCard design configures the system to support devices with versatile pin-outs and helps to generate the best waveform quality. Like other SYSTEM GENERAL programmers, the software upgrades for the AllWriter are free.

Package Contents:

The standard AllWriter package includes:

AllWriter Base Unit	1
DIP 48 Adapter	1
System Diskette (Programmer Driver Software)	2
Power Cable (UK / Euro)	1
RS-232C Serial Port Cable (9-pin)	1
Parallel Port Cable (25-pin)	1
MatchCards	see below
User Manual	on-line

The following MatchCards are supplied with the AllWriter as Standard:

"Match Cards"	Device Support
DIP-48-MEM-00	FLASH, EEPROM, EPROM
DIP-48-MEM-01	29F080 / 016, 49F8192, 49B/LV2048
DIP-48-MOT-00	Motorola 68HC705X
DIP-48-MOT-01	Motorola 68HC705X / 711X
DIP-48-MPU-00	Intel 87C, Atmel 87C/ 89S/ 90S
DIP-48-MPU-01	Zilog 86E
DIP-48-MPU-02	Philips 87C/ 89C, Siemens
DIP-48-MPU-03	ST 86E/ 62T/ 62E
DIP-48-MPU-04	Cypress CY7C63xxx/ 37xxx
DIP-48-PIC-00	Microchip PIC
DIP-48-PLD-00	16V8/ 20V8/ 22V10
DIP-48-SER-00	17C/ 24C/ 25xxx/ 59C/ 93C/ 33C

Please contact Equinox Technologies for further assistance in locating support for a particular device.

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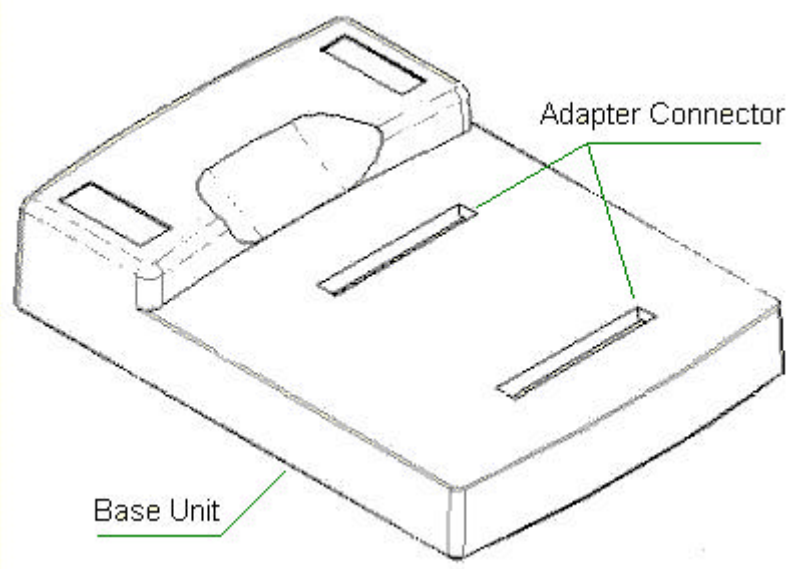
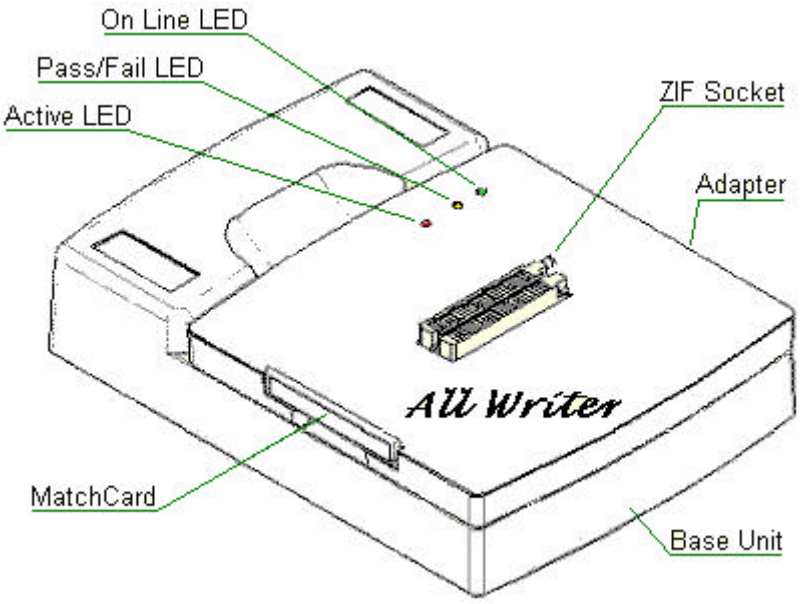
Hardware Overview - The Base Unit





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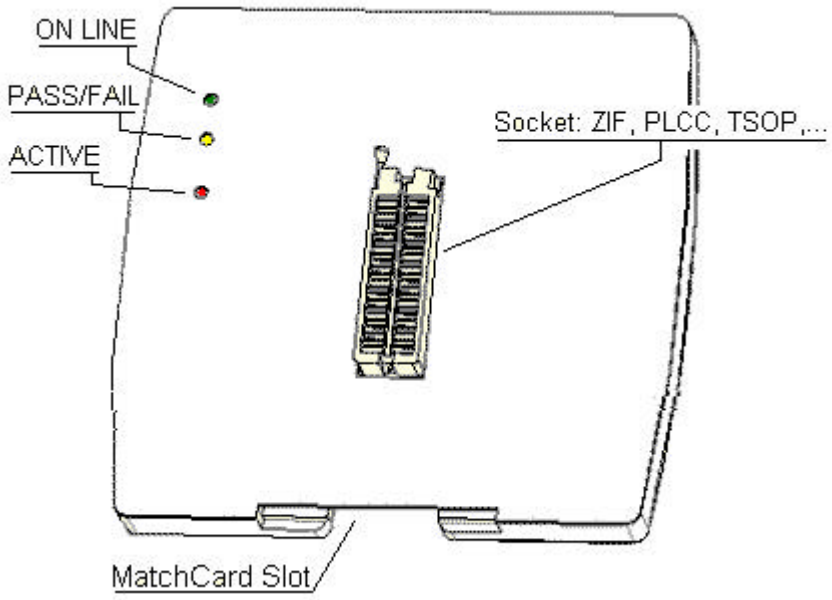
Hardware Overview - The Adaptor



The LED Display

There are three LED's on the socket adapters. Refer to the description below for their display and status:

LED	Status	Description
ON LINE	Green	Power-On OK
	Orange	Power-On Fail Self Test Fail
PASS/FAIL	Green	Operation Passed Including: Self Test OK, DRAM Test OK, Program Passed
	Orange	Operation in Process
	Red	Operation Failed Including: Self Test Fail, DRAM Test Fail, Program Fail
ACTIVE	Red	Socket operation in progress
	Flashing Red	Socket waiting for IC insertion. Indicate an enabled socket.
	Off	Socket not in operation.

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Hardware Overview - MatchCard

What is a MatchCard and how to search for the correct MatchCard?

A MatchCard is a special adapter card which is inserted in the front edge of the socket adapters. Each MatchCard includes special circuitry required to program a specific device family. Socket adapters with the MatchCard slot must have a MatchCard inserted in order to program a device. Changing the MatchCard on the socket adapter also changes the configuration of the programming system and the devices supported. Therefore, be sure to insert the correct MatchCard before you program a specific device.

If you do not know which MatchCard you need to program a particular device, simply run the AW.EXE and click 'Chip List Viewer' button under Communication Dialog (see example on page 8). A Device Select dialog will allow you to enter the device number and search the correct MatchCard for you.

Some socket adapters might not have MatchCard slot design. This usually happens on those adapters designed for super fine-pitched device packages. There is a technical difficulty to route the pins due to the tight pin pitch of the packages.

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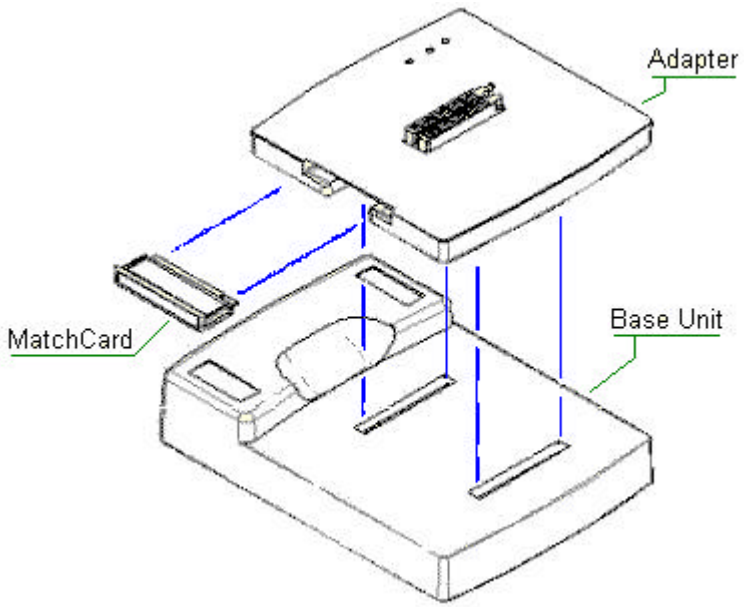
Checking Your Computer System

Minimum PC requirements:

- PC 486-33 SX or better.
- Microsoft Windows 95, 98
- 8 MB RAM
- 4 MB free disk space.



Setting up the Hardware

The AllWriter consists of a base unit and a chosen socket adapter. A MatchCard must be inserted if the socket adapter has a MatchCard slot. Follow the procedures below to set-up the hardware and install the software:

1. **Make sure that the power is off on the base unit.**

2. **Connect Socket Adapter**
   To connect the socket adapter in the base unit, align the front end of the adapter flush toward the front end of the base unit. The guiding slots of the 2 female connectors on the base unit will slide into the 2 male connectors on adapters ensuring correct alignment. Make sure to use both hands to push down the adapter from the front and rear ends evenly for connection.

   Warning! Connecting/Removing the socket adapter with power on the base unit might damage the system.

   The socket adapter might have been connected to the base unit when you received your AllWriter. However, the vibration of transportation might adversely affect the connection between the socket adapter and the base unit. If so, simply follow the instruction above to reconnect the socket adapter.

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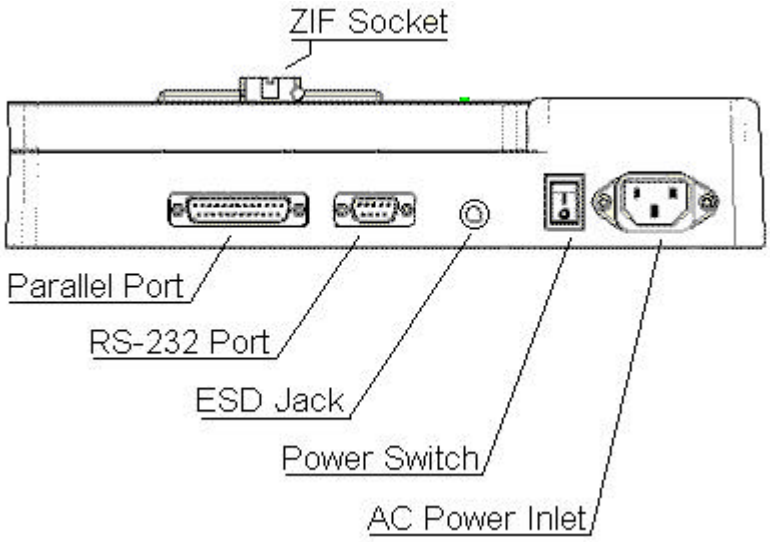
3. **Connect the PC Communication port**
   Choose to connect either the serial port or the parallel port from your AllWriter to the PC. The software allows you to choose either the serial or parallel communication. To protect your PC and the AllWriter, make sure to turn the power off on your PC for the port connection.

4. **Connect the power cord**
   The AllWriter uses a three-pronged mains power cord, which should be fitted in a grounded electric outlet only. This design is a safety precaution for the programmer operators and a protective measure against possible ESD damages for the programmer and target devices.



Installing the Software

Follow the procedures below for the software installation:

1. Insert AllWriter Setup diskette #1 in the floppy driver (Drive A: or Drive B:)
2. Under Windows, click the Start button at the lower-left corner and select Run
3. Enter the name of the floppy drive, where you inserted the Setup diskette, followed by ':\setup' (for example, A:\setup). Click Ok to start.
4. Follow the instructions on the PC screen until the installation is finished,
5. Turn the power on AllWriter and wait until the system goes through self-test, calibration. The ON LINE LED will be green to indicate that the system has passed all tests.
6. Under Windows, click the AllWriter icon to execute AW.EXE.

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Executing AW.EXE

The installation program will automatically create an entry for 'AW.EXE' on your desktop Start Menu. Simply click on Start and point to Programs | AllWriter | AllWriter. Click on AllWriter to launch AW.EXE.

The program AW.EXE enables the communication between the PC and the AllWriter programmer and runs in Demo mode as well as a stand-alone application if the programmer is not connected.

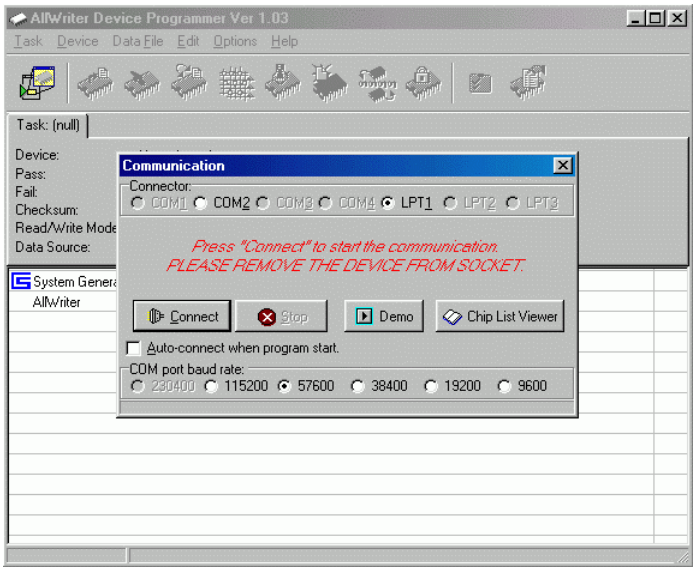
You can either download the source file from a disk drive or a master device, which already contains the desired source code. Supported file formats are:

- ✓ Intel Hex
- ✓ Microchip INHX
- ✓ Tektronix Hex
- ✓ Motorola S
- ✓ Signetics Hex
- ✓ Extended Tekhex
- ✓ HP 64000 Absolute
- ✓ Spectrum
- ✓ TI SDSMAC
- ✓ ASCII Hex
- ✓ ASCII Oct
- ✓ ASCII Binary
- ✓ Formatted Binary
- ✓ Binary

The target device can be programmed if the following tasks have been successfully performed:

- ✓ the connection between the program and the programmer is established
- ✓ the required device is selected
- ✓ the source code is loaded
- ✓ the device to be programmed is plugged into the programmer's ZIF-socket (see programming example on next page).

The 'Chip List Viewer' within AW.EXE gives information about the supported devices and which MatchCard (see page 6) is needed for each device.



Screenshot of AW.EXE after launching

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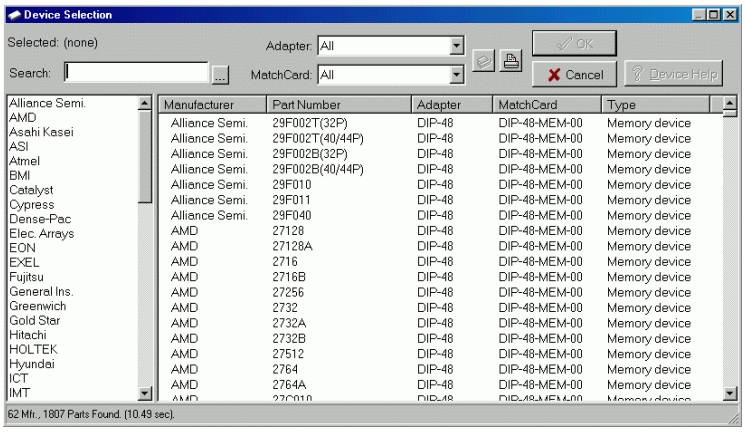
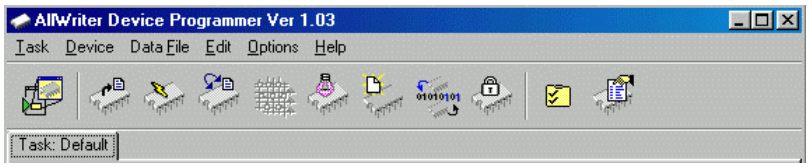
Programming Example

This example explains how to program an Atmel AT90S4414 (AVR) microcontroller.
After installing the software and connecting the AllWriter programmer either to the spare serial or parallel port of your computer do the following steps:

1. Launch the AllWriter software from “Start | Programs | AllWriter | AllWriter”.
2. To find the properly Match Card for the silicon press the <Chip List Viewer> button in the communication window.
3. Make sure that the Match Card choice in the Device Selection window is set to “all” and key in the whole silicon number in the Search field (here AT90S4414).
   The list now shows the manufacturer, the part number, the adapter needed, the associated Match Card and the silicon type.



4. Screenshot of the Chip List Viewer window
5. Insert the required Match Card into the AllWriter programmer, which must still be **powered off**!
6. Make sure that the ZIF-socket is empty and switch on the AllWriter programmer.
   Wait a few seconds until the “ON LINE” and “PASS/FAIL”-LED’s are green.
7. From the dialogue box displayed, ensure that the proper connector type is selected and press the <Connect> button
8. After a few seconds connection time, select the AT90S4414 silicon via the “Device | Select Device” menu or use the associated button on the button bar.
9. Insert the AT90S4414 into the ZIF-socket.
10. Download the program file using the “Data File | Download” menu.
11. Program the device using the item “Program” in the “Device” menu or the program button on the button bar.
12. To end the program session, close the AllWriter software and switch off the AllWriter programmer.



Screenshot of the Menu and Button bar

Note: Please refer to the comprehensive on-line help to get further information about the software and the programmer.

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Frequently Asked Questions (FAQ`s)

1. **What versions of windows are supported?**

   Answer: Microsoft Windows 95, 98, NT4.0 **not** Microsoft Windows 3.11

2. **What mains power cord does the AllWriter comes with and in which voltage range does it work?**

   Answer: The AllWriter programmer is supplied with either an EU, an UK or an US standard mains power cord. Simply attach the two-letter code to the Equinox order code, e.g. SG-ALLWRITER-1-UK for an UK purchase order.
   The programmer can be used from 100 V up to 240 V at 50-60Hz.

3. **How do I find out whether the AllWriter supports a particular device?**

   Answer: Launch the AllWriter software 'AW.EXE' (see page 9) and press the <Chip List Viewer> button. Ensure in the 'Chip List Viewer' window that the 'Adaptor'-, 'MatchCard'- and 'Package'-choice (availability varies between different software versions) is set to 'All'. Enter the full device part number into the 'Search' text field. If the AllWriter supports the device, it will be listed in the window on right site.

4. **What is a MatchCard?**

   Answer: A MatchCard is a special adapter card which is inserted in the front edge of the socket adapters. Each MatchCard includes special circuitry required to program a specific device family. Socket adapters with the MatchCard slot must have a MatchCard inserted in order to program a device. Changing the MatchCard on the socket adapter also changes the configuration of the programming system and the devices supported. Therefore, be sure to insert the correct MatchCard before you program a specific device.

5. **What MatchCards does the AllWriter come with as standard?**

   Answer: The AllWriter programmer ordered from Equinox Technologies (Order Code: SG-ALLWRITER-1) comes with the following MatchCards as standard:

"Match Cards"	Device Support
DIP-48-MEM-00	FLASH, EEPROM, EPROM
DIP-48-MEM-01	29F080 / 016, 49F8192, 49B/LV2048
DIP-48-MOT-00	Motorola 68HC705X
DIP-48-MOT-01	Motorola 68HC705X / 711X
DIP-48-MPU-00	Intel 87C, Atmel 87C/ 89S/ 90S
DIP-48-MPU-01	Zilog 86E
DIP-48-MPU-02	Philips 87C/ 89C, Siemens
DIP-48-MPU-03	ST 86E/ 62T/ 62E
DIP-48-MPU-04	Cypress CY7C63xxx/ 37xxx
DIP-48-PIC-00	Microchip PIC
DIP-48-PLD-00	16V8/ 20V8/ 22V10
DIP-48-SER-00	17C/ 24C/ 25xxx/ 59C/ 93C/ 33C

6. **What adaptor does the AllWriter come with as standard?**

   Answer: It comes with the DIP-48 adaptor suitable for dual-in-line 0.3"/0.6" devices with up to 48 pins.

7. **Can I use generic PLCC/TQFP/SOIC adaptors etc. with the AllWriter?**

   Answer: Yes. It is possible to insert any standard programming adaptor into the DIP-48 adaptor supplied with the programmer. For example, to program an 89C51 in PLCC-44 package, insert a PLCC-44 adaptor (Equinox Order Code: AD-PLCC44-A or equivalent) into the AllWriter DIP-48 adaptor in the same position as you would insert the DIP-40 device.

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8. **Should I connect the AllWriter to the PC Serial or Parallel?**

   Answer: Apart from any performance reasons (e.g. speed) is it does not matter whether you choose the spare serial or spare parallel port to connect the programmer to your computer. The parallel port is likely to be faster for data download to the programmer.

9. **Where do I get driver software updates from?**

   Answer: Driver software can be downloaded from the Equinox Technologies web site at: www.equinox-tech.com

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